

Abstract

A method for electrically charging a probe by plasma technology for use in pipetting compounds in small volumes includes the steps of placing the probe to be charged in a plasma chamber; creating a vacuum within the plasma chamber and then introducing a stable gas into the plasma chamber; applying electromagnetic energy to the plasma chamber, thereby molecularly disassociating the gas, thus creating charged ions, free electrons, and free radicals, charging the probe by the free radicals attaching to the probe; venting the plasma chamber to back to atmospheric pressure; and removing the charged probe from the plasma chamber, whereby the charged probe can pipette compounds in small volumes. The method is applicable to pipetting both liquid and solid compounds. In another embodiment, the plasma generation is at atmospheric pressure without a containment chamber and the surface charging effect is used for surfaces of both the fluid dispensing device and the fluid containing device. The component surfaces of the fluid dispensing or fluid containing device are placed in proximity to the plasma generation device within the area of plasma generation, electromagnetic energy is applied to the existing atmospheric gas or to the existing atmospheric gas with other gases added, thereby molecularly disassociating the gas, thus creating charged ions, free electrons, and free radicals, charging the surfaces of the fluid dispensing or fluid containing device and then removing the fluid dispensing or fluid containing device from the area of plasma generation.

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